

What Is Claimed Is:

1. An organic electroluminescent device, comprising:
 - a gate line and a data line formed over a substrate, the gate and data lines perpendicularly crossing each other and defining a pixel therebetween;
 - a first driving unit formed in the pixel and comprised of a first switching TFT and a first driving TFT;
 - a power line delivering a current signal to the first driving TFT;
 - an organic electroluminescent diode contacting the first driving TFT and receiving the current signal from the first driving TFT; and
 - a second driving unit formed in the pixel and comprised of a second switching TFT and a second driving TFT, the second driving unit being a backup circuit that can deliver the current signal from the power line to the organic electroluminescent diode when the first driving unit malfunctions.
2. The device of claim 1, wherein the first switching TFT comprises:
 - a gate connected to the gate line;
 - a source connected to the data line; and
 - a drain connected to a gate of the first driving TFT,wherein the first driving TFT comprises:
 - the gate connected to the drain of the first switching TFT;

a source connected to the power line; and
a drain connected to the organic electroluminescent diode,
wherein the second switching TFT comprises:
a gate connected to the gate line;
a source connected to the data line; and
a drain connected to a gate of the second driving TFT, and
wherein the second driving TFT comprises:
the gate connected to the drain of the second switching TFT;
a source connected to the power line; and
a drain connected to the organic electroluminescent diode.

3. The device of claim 2, further comprising a first storage capacitor that is connected in parallel to the first driving TFT and a second storage capacitor that is connected in parallel to the second driving TFT.

4. The device of claim 3, wherein the first storage capacitor is formed between the gate of the first driving TFT and the source of the first driving TFT.

5. The device of claim 4, wherein the first storage capacitor includes the gate of the first driving TFT and the power line.

6. The device of claim 3, wherein the second storage capacitor is formed between the gate of the second driving TFT and the source of the second driving TFT.
7. The device of claim 6, wherein the second storage capacitor includes the gate of the second driving TFT and the power line.
8. The device of claim 2, further comprising an open portion between the power line and the source of the second driving TFT, wherein the open portion electrically separates the second driving TFT from the power line at the first stage of fabricating the organic electroluminescent device and then is closed to electrically connect the power line to the second driving TFT when the first driving unit malfunctions.
9. The device of claim 8, wherein a portion between the power line and the source of the first driving TFT is cut open when the open portion becomes closed, thereby disconnecting the first driving unit so that only the second driving unit can operate.
10. The device of claim 1, wherein the organic electroluminescent diode includes an anode electrode, a cathode electrode and an organic luminous layer between the anode and cathode electrodes.

11. The device of claim 10, wherein the anode electrode is transparent and the organic luminous layer includes a hole transporting layer, an emission layer and an electron transporting layer in sequential order from the anode electrode.

12. An organic electroluminescent device, comprising:

a gate line and a data line formed over a substrate, the gate and data lines perpendicularly crossing each other and defining a pixel therebetween;

a first driving unit formed in the pixel and comprised of first and second switching TFTs and first and second driving TFTs;

a power line delivering a current signal to the first driving TFT;

an organic electroluminescent diode contacting the first driving TFT and receiving the current signal from the first driving TFT; and

a second driving unit formed in the pixel and comprised of third and fourth switching TFTs and third and fourth driving TFTs, the second driving unit being a backup circuit that can deliver the current signal from the power line to the organic electroluminescent diode when the first driving unit malfunctions.

13. The device of claim 12, wherein the first switching TFT comprises:

a gate connected to the gate line;

a source connected to the data line; and

a drain connected to a source of the second switching TFT,

wherein the second switching TFT comprises:

a gate connected to the gate line;

the source connected to the drain of the first switching TFT; and

a drain connected to gates of the first and second driving TFTs,

wherein the first driving TFT comprises:

the gate connected to the source of the second switching TFT;

a source connected to the power line; and

a drain connected to the organic electroluminescent diode,

wherein the second driving TFT comprises:

the gate connected to the drain of the second switching TFT;

a source connected to the power line; and

a drain connected to both the drain of the first switching TFT and the source of the second switching TFT,

wherein the third switching TFT comprises:

a gate connected to the gate line;

a source connected to the data line; and

a drain connected to a source of the fourth switching TFT,

wherein the fourth switching TFT comprises:

a gate connected to the gate line;
the source connected to the drain of the third switching TFT; and
a drain connected to gates of the third and fourth driving TFTs,
wherein the third driving TFT comprises:
the gate connected to the drain of the fourth switching TFT;
a source connected to the power line; and
a drain connected to the organic electroluminescent diode, and
wherein the fourth driving TFT comprises:
the gate connected to the drain of the fourth switching TFT;
a source connected to the power line; and
a drain connected to both the drain of the third switching TFT and the
source of the fourth switching TFT.

14. The device of claim 13, further comprising a first storage capacitor that is connected in parallel to the first and second driving TFTs and a second storage capacitor that is connected in parallel to the third and fourth driving TFTs.

15. The device of claim 14, wherein the first storage capacitor is formed between the gates of the first and second driving TFTs and the sources of the first and second driving TFTs.

16. The device of claim 15, wherein the first storage capacitor includes the gates of the first and second driving TFTs and the power line.

17. The device of claim 14, wherein the second storage capacitor is formed between the gates of the third and fourth driving TFTs and the sources of the third and fourth driving TFTs.

18. The device of claim 17, wherein the second storage capacitor includes the gates of the third and fourth driving TFTs and the power line.

19. The device of claim 13, wherein the drain of the first switching TFT and the source of the second switching TFT are formed together as a single piece monolithic structure.

20. The device of claim 13, wherein the gates of the first and second driving TFTs are formed together as a single piece monolithic structure.

21. The device of claim 13, wherein the drain of the third switching TFT and the source of the fourth switching TFT are formed together as a single piece monolithic structure.

22. The device of claim 13, wherein the gates of the third and fourth driving TFTs are formed together as a single piece monolithic structure.

23. The device of claim 13, further comprising a first open portion between the power line and the source of the third driving TFT and a second open portion between the data line and the source of the third switching TFT, wherein the first open portion electrically separates the third driving TFT from the power line at the first stage of fabricating the organic electroluminescent device and then is closed to electrically connect the power line to the third driving TFT when the first driving unit malfunctions, and wherein the second open portion electrically separates the third switching TFT from the data line at the first stage of fabricating the organic electroluminescent device and then is closed to electrically connect the data line to the third switching TFT when the first driving unit malfunctions.

24. The device of claim 23, wherein a portion between the data line and the source of the first switching TFT is cut open when the first and second open portions become closed, thereby disconnecting the first driving unit so that only the second driving unit can operate.

25. The device of claim 12, wherein the organic electroluminescent diode includes an anode electrode, a cathode electrode and an organic luminous layer between the anode and cathode electrodes.

26. The device of claim 25, wherein the anode electrode is transparent and the organic luminous layer includes a hole transporting layer, an emission layer and an electron transporting layer in sequential order from the anode electrode.